



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,474	04/05/2002	Alan T. Jackson	3017.001 Wray	6396
7590	10-16/2003			
Steven L Permut Reising Ethington Barnes Kisselle Learman & McCulloch PO Box 4390 Troy, MI 48099-9998			EXAMINER GRIFFIN, WALTER DEAN	
			ART UNIT 1764	PAPER NUMBER

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,474

Applicant(s)

JACKSON ET AL.

Examiner

Walter D. Griffin

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 11 and 44-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11, 44-71 and 74-79 is/are rejected.
- 7) ☒ Claim(s) 72 and 73 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 011003 6) ☐ Other: _____

DETAILED ACTION

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because the claiming of foreign priority to PCT/US00/00719 on page 2 is improper. In addition to this being an incorrect serial number, it is not proper to claim foreign priority to the PCT application since the present application is a national stage of the PCT application as indicated on page 1 of the declaration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 1764

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 11, and 44-57 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rogers et al. (US 6,389,820).

The Rogers reference discloses a hydrate composition such as a natural gas hydrate. The hydrate is formed by adjusting the temperature of a gas-water-surfactant solution to a level at which hydrates form. The presence of surfactant maximizes the gas content of the hydrate particles. Since the gas content of the hydrate is maximized and Rogers also discloses that the utilization of the water in the hydrates can approach 100%, the hydrates disclosed by Rogers would necessarily have the claimed gas content and desolution temperatures. See column 2, lines 52-67; column 3, lines 35-48; column 4, lines 1-44; column 5, lines 38-51; and column 6, lines 14-36.

Art Unit: 1764

In addition, the presently claimed properties of gas content and desolution temperatures would obviously have been present one the Rogers product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection made above under 35 USC 102.

Claims 58, 61-71, 77, and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers et al. (US 6,389,820).

The Rogers reference discloses a process for producing a hydrate such as a natural gas hydrate. The process comprises forming a gas-water-surfactant mixture and then adjusting the temperature of this mixture to a level at which hydrate particles form. Typical temperatures range from 30° to 50°F (-1° to 10°C) and typical pressures are generally below about 700 psi (48 bar). The surfactant can be an alkali metal alkyl sulfonate or sulfate. A specifically disclosed surfactant is sodium lauryl sulfate. The surfactant is preferably added in amounts ranging from 200 to 1200 ppm (0.02 to 0.12%). See column 2, lines 52-67; column 3, lines 35-48; column 4, lines 1-44; column 5, lines 38-51; and column 6, lines 14-36.

The Rogers reference is silent as to allowing the gas-water-agent system to reach equilibrium as in claim 58 and does not disclose a pressure of greater than 50 bars.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Rogers by allowing the system to reach equilibrium as claimed because hydrate production would be expected as long as the final conditions are effective for the production of hydrates.

Art Unit: 1764

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Rogers by utilizing a pressure as in claim 77 because Rogers discloses that operating conditions will vary according to the particular gas-water-surfactant system. Therefore, one having ordinary skill in the art would adjust the conditions in order to obtain maximum efficiency in the process.

Claims 74-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers et al. (US 6,389,820) as applied to claim 61 above, and further in view of Benesh (US 2,270,016).

As discussed above, the Rogers reference does not disclose the use of an alcohol as the surfactant.

The Benesh reference discloses that the addition of alcohol to the water in a hydrate forming process increases the solubility of the gas in the water and accelerates the rate of formation of the hydrate. See page 2, left column, lines 21-28.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Rogers by substituting an alcohol for the disclosed surfactants as suggested by Benesh because alcohol provides the same effect as the surfactants disclosed by Rogers and also accelerates the rate of hydrate formation. Regarding the specifically claimed isopropyl alcohol, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use this type of alcohol in any effective amount because it is chemically similar to the alcohols that are specifically disclosed by Benesh and therefore would be expected to provide the disclosed benefit.

Art Unit: 1764

Claims 59, 60, and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers et al. (US 6,389,820) as applied to claim 58 above, and further in view of Gudmundsson (US 5,536,893).

As discussed above, the Rogers reference does not disclose atomizing, agitating or mixing the components.

The Gudmundsson reference discloses the atomization, agitation, or mixing of the components in a hydrate formation process. See column 6, lines 40-51.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Rogers by atomizing the components or mixing the components as suggested by Gudmundsson because hydrate formation rates will be improved.

Allowable Subject Matter

Claims 72 and 73 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose the use of sodium tripolyphosphate as the agent in the gas-water mixture.

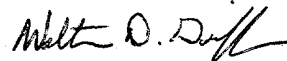
Art Unit: 1764

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
October 9, 2003